

Goal 1 : Use Basic Communication and Mathematics Skills

Academic Expectation

1.1:

Students use reference tools such as dictionaries, almanacs, encyclopedias, and computer reference programs and research tools such as interviews and surveys to find the information they need to meet specific demands, explore interests, or solve specific problems.

Learning Links: Encyclopedia / Media / Interviews / Surveys / Database / Catalogue / Electronic Bulletin Board / Index / Inventory / Budget / Dictionary / Thesaurus

Elementary Demonstrators

Middle School Demonstrators

High School Demonstrators

Demonstrators should be read from bottom to top, but need not be demonstrated sequentially.

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| <ul style="list-style-type: none"> • Use research tools to access and synthesize information. • Identify and use telecommunication options to obtain information. • Identify and use print and non-print (e.g., video, CD-ROM) resources to obtain information. • Question individuals to obtain information. • Observe to obtain information. • Manipulate objects to obtain information. | <ul style="list-style-type: none"> • Use a variety of research tools and evaluate the effectiveness of each relevant to a specific need or problem. • Analyze and compare information accessed from different sources. • Use a variety of telecommunication resources to obtain information on a specific need or problem. • Question to obtain information on a specific need or problem. • Gather information through observation on a specific need or problem. | <ul style="list-style-type: none"> • Gather, analyze, compile, and use relevant information from a variety of sources on a specific need or problem. • Use a variety of telecommunication resources to obtain information on a specific need or problem. • Question a variety of sources to obtain information on a specific need or problem. |
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Sample Teaching/Assessment Strategies:

Collaborative Process: Cooperative Learning • **Community-Based Instruction:** Networking • **Continuous Progress Assessment:** Performance Events/Exhibitions • **Problem Solving:** Inquiry, Interviews, Questioning • **Technology/Tools:** Computers, Distance Learning, Manipulatives, Telecommunications • **Whole Language Approach** • **Writing Process**

These sample strategies offer ideas and are not meant to limit teacher resourcefulness. More strategies are found in the resource section.

Ideas for Incorporating Community Resources:

- Invite a local phone company representative to demonstrate how to use a telephone to obtain information and illustrate telephone adaptations for individuals with disabilities.
- Visit or telecommunicate with local public library, area college library, and State Department for Libraries and Archives.
- Visit local cemeteries to compile data (e.g., birth/death dates, family life expectancy).

Core Concept: Accessing Sources

Sample Elementary Activities



- Watch a news broadcast on television and retell it for a student audience. P
- Create and video broadcast your own news program. PE
- Interview diverse people from the community about job responsibilities. Create a database about careers. PE, P
- Telephone three different grocery stores to compare prices of the same products. Create a spreadsheet and a graph of the results. P
- Conduct a CD-ROM search on bears and compile a resource list of "bear facts." P

Sample Middle School Activities



- Establish and use criteria to evaluate a variety of print and non-print materials based on how well they provide the information needed. PE, P
- Examine diverse problems that have statewide implications. Identify and evaluate possible solutions from various sources of information. P
- Interview a city official on regulations surrounding garbage disposal. Prepare a multimedia presentation. PE
- Investigate the reason behind a school rule. Interview the principal, teachers, staff, and students on their opinions of the rule. Organize the information using a database. Videotape a debate of the issue. PE, OE, P

Sample High School Activities



- Use telecommunications to gather information about tuition rates at various colleges, universities, business and technical schools. Compile, using a spreadsheet. PE, P
- Create a database of student support services available in the community. PE, P
- Investigate variables of car insurance rates for students. Analyze, compile, and report findings. PE, P
- Compile information on Kentucky's endangered species. Design and implement a campaign to rescue one of the species. PE, OE, P

Reflections



In a high-tech society, life-long learning is a must if students are to keep pace with the rapid rate of change in their world. To be skillful learners throughout their lives, students must not only be adept at accessing the myriad resources available to them, but also be able to create their own new information. They must become comfortable with both print and non-print sources of data, with electronic communications, and with the more traditional interpersonal skills. These interpersonal skills include conducting interviews, gathering bibliographic sources, conducting systematic searches for data and information, and judging which information is useful and appropriate. Only with repeated practice at researching problems do students gain confidence and skill in accessing the sources they need.

The sample activities suggest a few possibilities for accessing sources. The purpose of this academic expectation is to design student activities that require authentic student research and to structure frequent and varied opportunities for exploring, investigating, gathering, and judging which information is useful and appropriate.

Sources: Naisbitt—Megatrends

Fogarty & Haack—Future World, Future School

Goal 1: Use Basic Communication and Mathematics Skills

Academic Expectation

1.2: Students make sense of the variety of materials they read.

Learning Links: Recipes / Advertisements / Schedules / Maps / Budgets / Manuals / Critiques/Movie Reviews / Catalogs / Letters / Applications / Charts / Literature / Newspapers / Magazines / Encyclopedias / Financial Statements

Elementary Demonstrators

Middle School Demonstrators

High School Demonstrators

Demonstrators should be read from bottom to top, but need not be demonstrated sequentially.

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| <ul style="list-style-type: none"> • Demonstrate an understanding of print materials read in and out of school. • Respond to reading through a variety of forms (e.g., conversation, art, media, writing). • Use a variety of strategies (e.g., prior knowledge, predict, question, summarize) to construct meaning. • Relate reading experiences to life situations. • Select and use appropriate print materials (e.g., literary, informative, persuasive, practical) for a variety of purposes (e.g., pleasure, information, and practical application). • Choose print materials for personal interest both in and out of school. • Exhibit fluency in reading. • Show interest by listening to and/or reading a multicultural variety of print materials. | <ul style="list-style-type: none"> • Construct meaning and evaluate print materials read in and out of school. • Interpret reading using different modes of presentation. • Apply a variety of strategies (e.g., prior knowledge, predict, question, summarize) to construct meaning. • Relate reading experiences to life situations. • Analyze appropriate print materials (e.g., literary, informative, persuasive, practical) for a variety of purposes (e.g., pleasure, information, and practical application). • Select and read print materials for personal interest both in and out of school. | <ul style="list-style-type: none"> • Construct meaning, elaborate and respond critically to print materials read in and out of school. • Apply a variety of strategies (e.g., prior knowledge, predict, question, summarize) to construct meaning and evaluate the selected strategy. • Relate reading experiences to life situations. • Select and use appropriate print materials (e.g., literary, informative, persuasive, practical) for specific purposes (e.g., pleasure, information, and practical application). • Select and read print materials for personal interest both in and out of school. |
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Sample Teaching/Assessment Strategies:

Collaborative Process • Community-Based Instruction: Service Learning • **Continuous Progress Assessment**
Graphic Organizers • Problem Solving: Brainstorming, Debate, Interviews, Questioning, Research • **Technology/Tools:** Computers, Games, Telecommunications • **Whole Language Approach • Writing Process**

These sample strategies offer ideas and are not meant to limit teacher resourcefulness. More strategies are found in the resource section.

Ideas for Incorporating Community Resources:

- Invite a local author, playwright, or poet to share samples of his/her work.
- Invite a representative of a local agency or company to interpret certain print material (e.g., utility company to explain how to read a bill, county extension agent to explain how to read and interpret nutritional information on food labels, bus company to explain how to read a route schedule).
- Read to special populations in the community (e.g., children in after-school childcare programs, participants in library story hour, individuals in hospitals).

Core Concept: Reading

Sample Elementary Activities



- Create the written text for a wordless picture book. Share your story with younger students. PE
- Respond to a reading selection:
 - through group dramatization.
 - by changing a main event to create a different ending.
 - by producing a commercial or advertisement. PE, OE, P
- Read ads for toys to find specific information (e.g., Does it need batteries? How much does it cost?) OE
- Read books/stories which contain recipes. Write class stories and recipes. PE
- Conduct a “book talk” about a favorite storybook. PE, OE, P
- Develop a rating/ranking system for books you read. OE

Sample Middle School Activities



- Write a response to a book in which you discuss how a character is like someone you know or how a character is like those in other books you have read. P
- Develop a chart to show the attributes you seek in a good book. OE
- Select background music to play while you read a book to a younger child. PE
- Create a graffiti board advertising a favorite book. PE
- Make a collage of propaganda techniques from printed ads. PE
- Gather materials on possible part-time jobs (e.g., baby-sitting, lawn-mowing). Prepare a visual display to illustrate some aspect of the job. PE, P

Sample High School Activities



- Read articles which present two different political or cultural viewpoints. Choose one viewpoint and prepare an argument in support of your choice. OE, P
- Read a story and watch a videotape of the same story. Analyze how each medium impacts the presentation of the story. OE
- Select a story or novel to make into a film. Based on personal characteristics, cast yourself and some classmates into appropriate roles in the film. Analyze how the characters would change if they were from a cultural background different from the one originally cast. PE, OE, P
- Read legal documents (e.g., contracts, wills, deeds); analyze the critical attributes and the implications for future personal use. P
- Read the manuals of similar automobiles made by different manufacturers; make a comparison presentation. PE, OE
- Read books and/or articles on projected societal/economic changes; analyze and predict the future demands of the job market. OE, P

Reflections



Reading is the act of constructing meaning from printed text. It is not a passive act; in fact, it is an intensely interactive process. If students merely word call, they can passively move through the printed page. However, if they read and think about what they're reading—engaging in a read/think, read/think, read/think mode—they not only move through the text, but they construct meaning from it as well. This constructive process inside the mind is called reading.

The suggested activities guide students through a number of structured reading episodes that require explicit individual responses to the reading. Using the sample activities, work with other teachers to develop structured reading experiences that require students to interact with the text, to read with purpose, and to construct meaning from what they read.

Remember, reading is not just a subject students take in school; it is a tool they need in every academic endeavor. If students are to become skillful readers, teachers must structure opportunities in a print-rich environment that cause students to think about the text as they decipher the words.

Source: Anderson, Hiebert, Scott, Wilkinson, et. al.—Becoming a Nation of Readers

Goal 1: Use Basic Communication and Mathematics Skills

Academic Expectation

1.3: Students make sense of the various things they observe.

Learning Links: American Sign Language / Advertisements / Photography / Movement / Patterns / Experiments / Mood / Television / Visual Arts / Relationships / Astronomy / Performances / Body Language

Elementary Demonstrators

Middle School Demonstrators

High School Demonstrators

Demonstrators should be read from bottom to top, but need not be demonstrated sequentially.

- Draw inferences and defend conclusions based upon a set of observations.
- Compare multiple observations of the same situation.
- Construct meaning from observing nonverbal cues (e.g., gestures, eye contact, touch).
- Connect observations to prior knowledge/experiences.
- Observe for a specific purpose.
- Use all the senses to explore environments (e.g., human, cultural, physical).

- Analyze, organize, and interpret information gathered from observations.
- Evaluate multiple observations of the same situation.
- Construct meaning from observing nonverbal cues (e.g., gestures, eye contact, touch).
- Analyze observations using prior knowledge/experiences.

- Formulate and defend ideas by connecting new observations with prior knowledge/experiences.
- Analyze, evaluate, and apply information gathered from observations.
- Construct meaning from observing nonverbal cues (e.g., gestures, eye contact, touch).

Sample Teaching/Assessment Strategies:

Collaborative Process: Cooperative Learning, Peer Tutoring, Reciprocal Teaching • **Community-Based Instruction:** Mentoring, Shadowing • **Continuous Progress Assessment:** Anecdotal Records, Interviews, Observation, Performance Events/Exhibitions, Self-assessment • **Problem Solving:** Interviews, Inquiry, Case Studies, Role Play • **Technology Tools:** Video/Videotaping • **Whole Language Approach** • **Writing Process**

These sample strategies offer ideas and are not meant to limit teacher resourcefulness. More strategies are found in the resource section.

Ideas for Incorporating Community Resources:

- Shadow a member of the community to observe and record the duties and responsibilities of the job.
- Interview a reporter, magician, meteorologist, inventor, or referee about how observations impact their jobs.
- Attend a professional or school performance.
- Invite a police artist to share how observations are the basis for composite sketches.

Core Concept: observing

Sample Elementary Activities



- Select a product that is widely advertised in various media. Determine which medium seems most effective in selling this item. Support your conclusion. PE, OE
- Use senses to observe uncooked popcorn kernels; record attributes. Pop the corn and observe again. Record attributes of popped corn. Discuss and draw conclusions about the cause of the physical change. PE, OE
- Select a rock or other object from the school yard. Observe for 5 minutes; describe your rock to a partner. Place all rocks from the class in a closed box. Find your rock. PE
- Observe and record signs of season during an outdoor walk. Classify observations according to senses. PE, P
- Sort a collection of objects (e.g., leaves, lids, keys) by attributes of your choice. Defend your classifications. PE
- Observe a child who has not learned to talk. Gather meaning from the non-verbal signals. PE

Sample Middle School Activities



- Form hypotheses about changes in a nearby community lake over the past two generations. Interview parents and grandparents about the conditions of the lake when they were young. Record and share information. Form class generalizations. Visit the lake and record current conditions. Draw conclusions, compare and test your hypotheses. Construct a model which illustrates the aspects of the lake's changes. P
- Watch a TV debate between political candidates first without sound and then with sound. Using established criteria, determine who is most effective in presenting his/her views in each. OE
- Watch a foreign film. Describe the actions observed and the emotions displayed. PE, OE
- Describe to a person who is visually impaired (non-sighted) the colors of the rainbow, using the other senses. OE
- Observe a non-objective painting. Describe and compare your observations with others in class. PE, OE

Sample High School Activities



- Observe and analyze the lifestyles or habits of healthy and unhealthy individuals. Make predictions about their future health. PE, OE
- Observe the behavior of peers and adults in school and draw inferences about the effects of their behaviors on daily routines. OE, P
- Attend a cultural event. Write a review for publication and illustrate with sketches or photographs. P
- Shadow individuals whose careers interest you. Develop a list of positive work attributes displayed. PE, P
- Observe the behavior of political candidates during a televised debate. Determine the importance of behavior on the electability of the candidate. PE, OE
- Construct a sociogram based on the observations of a group. PE, OE, P

Reflections



The skill of observing is so closely connected to memory that it's almost impossible to separate the two. Learning is retaining information: hooking new information up to past experiences, and eventually using the skill or concept learned in novel ways. To retain, one must remember. To remember, one must first notice, focus, observe, and put that observed information into short or long-term memory.

A basic skill of communication is the ability to observe and accurately report observations either orally or in written form. Students often need practice in developing their observational skills. They must first learn to focus their attention, remember what they see, and find appropriate ways to report the information.

In addition, skilled observers understand the difference between an observation and an inference. Observation is factual; evidence is visible. Inference is implied; meaning is extrapolated and then applied.

To facilitate skillful observations for students, the sample activities suggest an assortment of hands-on experiences. These activities are, of course, only beginnings. Opportunities for students to practice their skills of observing (focusing, remembering, reporting) need to be orchestrated throughout the student's day.

Source: Fogarty & Bellanca—Patterns for Thinking, Patterns for Transfer

Goal 1 : Use Basic Communication and Mathematics Skills

Academic Expectation

1.4: Students make sense of the various messages to which they listen.

Learning Links: Noise / Signals / Telecommunications / Music / Radio/TV / Conversation / Theatre / Animals / Humor / Conscience

Elementary Demonstrators	Middle School Demonstrators	High School Demonstrators
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Demonstrators should be read from bottom to top, but need not be demonstrated sequentially.

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| <ul style="list-style-type: none"> • Recognize the purpose and effectiveness of a message. • Apply a variety of listening strategies (e.g., predict, check, revise, question) for a specific purpose. • Recognize meaning from verbal cues (e.g., tone of voice, pitch, volume). • Select and summarize the key points from a message. • Listen for a specific purpose (e.g., information, entertainment). | <ul style="list-style-type: none"> • Analyze the purpose(s) and effectiveness of a message. • Interpret a message and support your interpretation. • Adjust listening strategies for a specific purpose (e.g., information, persuasion, imagination). • Construct meaning from verbal cues. | <ul style="list-style-type: none"> • Evaluate messages for a specific purpose. • Exhibit effective listening strategies for a specific purpose (e.g., information, persuasion, imagination). • Interpret the impact of verbal cues on a message. |
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Sample Teaching/Assessment Strategies: _____

Collaborative Process: Cooperative Learning, Peer Tutoring, Reciprocal Teaching • **Community-Based Instruction:** Mentoring • **Continuous Progress Assessment:** Conferencing, Interviews • **Problem Solving:** Brainstorming, Debate, Interviews, Questioning • **Whole Language Approach** • **Writing Process**

These sample strategies offer ideas and are not meant to limit teacher resourcefulness. More strategies are found in the resource section.

Ideas for Incorporating Community Resources: _____

- Attend a folk music festival, professional or school concert, opera, or church choir presentation.
- Perform songs, speeches, or sketches for special audiences (e.g., youngsters in childcare programs, senior citizens, songs in sign language for the hearing impaired, or songs in other languages).
- Interview a court stenographer.
- Invite a local biologist, naturalist, or individual knowledgeable about bird calls to class.

Core Concept: Listening

Sample Elementary Activities



- Listen to an instrumental recording then artistically interpret (e.g., draw a picture, create a dance, develop a skit) the emotions experienced. PE
- Create a variety of sound effects to accompany a dramatic presentation. Select and refine the most effective. PE
- Construct a model from oral directions. PE
- Listen to a story and draw an interpretation. PE
- Present a mock trial to a jury. Have jury members explain the reasons for their verdict. PE, OE
- Prepare a sound map of your school, home, or neighborhood. P

Sample Middle School Activities



- Record your voice in different situations and with different people. Analyze your speech and record your interpretations. P
- Choose a nature scene and describe the sounds to a person who is hearing impaired. PE, OE
- Analyze the placement of laugh tracks in a sitcom. PE, P
- Listen to regional dialects; analyze origins and patterns. P
- Choose music to accompany an oral reading of a poem. PE
- Darken the picture on a television and record what information is received. PE, OE
- Create a sound montage using common environmental noises. P

Sample High School Activities



- Prepare a diary of the most important sounds in your life. P
- Listen to songs which make a social statement.
 - Identify social messages delivered through the recordings. OE
 - Create a song with a current social message. PE
- Listen to advertisements; identify persuasive language or music and determine its impact on you, your peers, and on people from different backgrounds. PE, OE
- Record outdoor sounds for 30 minutes; present the information you heard in a creative medium (e.g., hypermedia, video, poem). PE
- Record an aural journal at a specified place and time throughout the year. P
- Create a video drama and accompanying soundtrack. PE, OE

Reflections



To communicate effectively, students must be skilled in reading, writing, speaking, and listening. In human interactions, we are either speaking or listening. Both of these postures are active. Certainly, speaking totally engages the one speaking—but what about listening? Listening, too, must be active and attentive or communication is ineffective.

To structure listening activities that require active, attentive listening, the students should: "Listen and..." evaluate; compare; predict; interpret; web; construct; analyze; determine; describe; present; complete; choose; make; identify. The sample activities suggest a variety of responses.

Rather than just telling students to listen, structure listening activities so students are accountable. Create situations in which students must act on the information after a listening experience. For example, before a concert or film, instruct them to listen for three phrases or scenes; during a talk, have them signal when they hear a targeted phrase. Preparing students ahead of time enables them to use prior knowledge and past experiences to make connections more easily. The more background students have as they approach new material, the more they know what to listen for, and the more likely they are to listen attentively and with purpose.

Source: Bellanca & Fogarty—Blueprints for Thinking in the Cooperative Classroom

Goal 1: Use Basic Communication and Mathematics Skills

Academic Expectation

1.5 - 1.9: Students use mathematical ideas and procedures to communicate, reason, and solve problems.

Learning Links: Surveys / Matrices / Budget / Marketing / Construction / Interest Schedules / Calculators / Computer Data Displays / Census / Visual Art / Photography / Architecture / Diagnosis / Legal Proof / Mystery / Evidence

Elementary Demonstrators



Middle School Demonstrators



High School Demonstrators



Demonstrators should be read from bottom to top, but need not be demonstrated sequentially.

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| <ul style="list-style-type: none"> • Draw logical conclusions and explain the thinking processes used in solving problems • Communicate the meanings of number, space, change, data, and measurement using words, pictures, physical materials, and symbols. • Select, apply, and justify appropriate mathematical procedures to solve real-life problems using whole numbers and simple fractions. • Listen to, read about, write about, and speak about mathematical ideas and procedures. | <ul style="list-style-type: none"> • Use deductive and inductive reasoning to synthesize information related to problems, making conjectures, exploring, validating, and convincing others. • Communicate the meanings of number, space, change, data, and measurement verbally, pictorially, symbolically, and concretely. • Model problem solving situations using oral, written, concrete, pictorial, graphic, and simple algebraic methods. • Select, apply, and justify appropriate mathematical procedures to solve real-life problems using rational numbers. | <ul style="list-style-type: none"> • Use deductive and inductive reasoning to synthesize information related to problems, developing facility with mathematical language and notation. • Communicate the meanings of number, space, change, data, and measurement, formulating mathematical definitions and generalizations and utilizing technology. • Select, apply, and justify appropriate mathematical procedures to solve real-life problems using real numbers. |
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Sample Teaching/Assessment Strategies:

Collaborative Process: Cooperative Learning • **Community-Based Instruction:** Service Learning • **Continuous Progress Assessment:** Performance Events, Portfolio Development, Interviews • **Problem Solving:** Inquiry, Brainstorming, Research, Debate, Creative Problem Solving, Future Problem Solving • **Technology/Tools:** Computers, Calculators, Manipulatives, Games

These sample strategies offer ideas and are not meant to limit teacher resourcefulness. More strategies are found in the resource section.

Ideas for Incorporating Community Resources:

- Use Census Department data to investigate population trends.
- Invite local quilters to class to show examples of repeated patterns (tessellations) in quilts.
- Collect information from local insurance agents to compare rates for various cars and drivers.
- Visit local landscaping operation or botanical garden and design a landscape project for the community using native plants (e.g., on school grounds, city park, vacant lot, or homeless shelter). Contact agencies for technical assistance.
- Organize service projects that use measurement skills (e.g. assist in Habitat for Humanity home building, monitor local water quality, build picnic tables).

Core Concept: Mathematical Communication and Reasoning

Sample Elementary Activities

- Design a quilt or T-shirt using geometric patterns. Explore the use of geometric patterns in art from a variety of cultures. PE, P
- Solve several different types of problems in which each team member uses a different method of computing (e.g., using a calculator, paper and pencil, mental math). Discuss which way of solving the problem is more efficient and why. OE
- Brainstorm patterns that can be identified in the environment, the home, a classroom, a closet, the zoo, a garden, a fruit and/or a fabric store. OE
- Group and sort buttons in a button box into sets based on type, color, size, number of holes, and shape. PE

Sample Middle School Activities

- Develop a set of directions for assembling a model that includes drawing and text. PE, OE, P
- Investigate Pascal's triangle to discover number patterns. Use these number patterns to aid problem solving. OE
- Determine if the local environment is being harmed by a certain behavior (e.g., littering, pollution). Analyze how the behavior, if continued, will affect the environment in the future and predict what actions could alter this trend. P
- Select an argument (e.g., changing tax structure, local bond issue) raised by a political candidate and determine the accuracy of the argument. OE, P
- Invent a "function machine." Display the results using computer graphics. PE, OE.

Sample High School Activities

- Design an investigation to determine the amount of food being thrown away from the school cafeteria. Organize and analyze the data. Survey the student body for menu alternatives. Propose a menu based on the survey. Implement and repeat the study to evaluate the new menu. Use spreadsheets, word processing, and computer graphics to collect, manipulate, and present the findings. PE, OE, P
- Select stocks and create a database from tracking highs, lows, increases, decreases, and trends. PE, P
- Design an advertisement layout according to determined criteria for a product or location. PE, P
- Design a better container for a product and present an argument to convince the manufacturer to use the new container. PE, P
- Compute and graph fixed and variable interest rates on a home loan using appropriate computer software. Evaluate the graph to determine the best selection for a specified situation. Defend your choice. PE, P

Reflections

Communication in the mathematics classroom entails "fundamental issues about knowledge: What makes something true or reasonable in mathematics? How can we figure out whether or not something makes sense? That something is true because the teacher of the book says so is the basis for much traditional classroom discourse. Another view, the one put forth here, centers on mathematical reasoning and evidence as the basis for the discourse. In order for students to develop the ability to formulate problems, to explore, conjecture, and reason logically, to evaluate whether something makes sense, classroom discourse must be founded on mathematical evidence. Writing is another important component of the discourse. Students learn to use, in a meaningful context, the tools of mathematical discourse - special terms, diagrams, graphs, sketches, analogies, and physical models, as well as symbols."

Source: National Council of Teachers of Mathematics - [Professional Standards for Teaching Mathematics](#)

Goal 1: Use Basic Communication and Mathematics Skills

Academic Expectation

1.10: Students organize information through development and use of classification rules and systems.

Learning Links: Flow Charts / Catalogues / Animal Kingdom / Yellow Pages / Inventories / Caste System / Schedules / Taxonomies / Genetics / Computer Programming / Census

Elementary Demonstrators

Middle School Demonstrators

High School Demonstrators

Demonstrators should be read from bottom to top, but need not be demonstrated sequentially.

- Develop and communicate a classification system based on a minimum of two criteria to show information and/or ideas.
- Apply a classification system based on a minimum of two criteria to organize objects, information, or ideas.
- Identify and analyze relationships among objects, information, or ideas.
- Investigate classification systems using real objects.
- Investigate relationships among real objects.

- Develop a classification system based upon multiple criteria to show relationships among objects, information, and ideas.
- Apply a classification system based upon multiple criteria to organize objects, information, and/or ideas.

- Develop a complex classification system to show relationships among objects, information, and/or ideas.
- Apply a complex classification system to organize objects, information, and/or ideas.

Sample Teaching/Assessment Strategies:

Collaborative Process: Cooperative Learning • **Community-Based Instruction:** Field Studies, Networking
Continuous Progress Assessment: Anecdotal Records • **Graphic Organizers:** Compare/Contrast Structures, Venn Diagrams • **Problem Solving:** Brainstorming, Formulating Models, Interviews • **Technology/Tools:** Manipulatives, Computers, Telecommunications

These sample strategies offer ideas and are not meant to limit teacher resourcefulness. More strategies are found in the resource section.

Ideas for Incorporating Community Resources:

- Visit the public library to observe how materials are classified.
- Interview various organizations in the community and classify them according to services provided.
- Invite a museum curator to discuss classification procedures.
- Use Audubon Society and bird watching surveys to investigate classification schemes.

Core Concept: **Classifying**

Sample Elementary Activities



- Determine a classification scheme for art reproductions, using two or more sorting criteria. PE, OE
- Sort a collection of small objects and give a rationale. Use the collection to make collages. PE
- Collect and display information about crops grown on a farm. PE, P
- Compare similar foods for the specific nutritional content of fats, sugar, sodium, etc. Develop a week-long nutritional menu based on your findings. P
- Compare species of trees in an urban environment with those in rural areas. Network through telecommunications to collect data and display using computer graphics. P

Sample Middle School Activities



- Develop different schemes for classifying baseball cards and use statistics to determine, by position, a “dream team” for a Nintendo game. P
- Sort plants by type and growing condition. Design and plant a garden based on information. PE, OE
- Invent and apply classification systems that show common characteristics found in some classmates (e.g., favorite color, food, story, poem). PE, OE, P
- Compare classification criteria in determining the ranking of cities in Kentucky to other metropolitan areas across the United States (e.g., lowest in violent crimes, highest in new jobs). PE, OE, P

Sample High School Activities



- Create a flowchart to classify polygons. PE
- Conduct a community survey (e.g., environmental problems, social needs, cultural needs, health concerns) and organize results. P
- Create a filing system for an office. Implement and make necessary adjustments. PE
- Analyze demographic information of the local population to determine marketing techniques. Analyze how marketing techniques vary based on the cultural make-up of the target audience. Present to advertising decision-makers. PE, OE, P

Reflections



Paralleling the skill of accessing information is the complementary skill of organizing that information. To make sense of the data gathered, systematic sorting and classifying of information are essential. In the process of sorting items into labeled categories, patterns emerge. The brain seeks order and patterns, so when students are able to organize input they are better able to connect it to prior knowledge and construct meaningful connections.

When there is a lot of information, data must be organized into manageable units. To create those units, a classification system must be devised and used.

From closets and sock drawers to the animal kingdom or the library, the opportunities to sort, categorize, label, and classify abound. Classification is evident everywhere, from yellow pages, zip codes, and area codes, to social security numbers, and airline fares.

The sample activities provide a starting point for other extended activities in classifying.




*Sources: Fogarty & Bellanca—Patterns for Thinking. Patterns for Transfer
Beyer—Practical Strategies for the Teaching of Thinking*

Goal 1: Use Basic Communication and Mathematics Skills

Academic Expectation

1.11: Students write using appropriate forms, conventions, and styles to communicate ideas and information to different audiences for different purposes.

Learning Links: Video/Film Scripts / Journals / Advertisements / Notation / Speeches / Letters / Manuals / Reports / Literature / Newspapers / Songs

Elementary Demonstrators 	Middle School Demonstrators 	High School Demonstrators 
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Demonstrators should be read from bottom to top, but need not be demonstrated sequentially.

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| <ul style="list-style-type: none"> • Establish and use criteria for effective writing to evaluate own and others' writing. • Use writing as a learning tool. • Write for a variety of purposes (e.g., expressive, transactive, imaginative) and forms (e.g., journal entry, letter, poem/story) to a variety of audiences. • Use a process approach to writing. • Exhibit fluency. • Generate ideas that stimulate language expression (e.g., brainstorming, free writing, storytelling, reading). • Express thoughts/ideas through verbal and/or symbolic representation (e.g., pictures, scribbles, words). | <ul style="list-style-type: none"> • Establish and use criteria for effective writing to evaluate own and others' writing. • Refine writing as a learning tool. • Write for a variety of purposes (e.g., expressive, transactive, imaginative) and forms (e.g., journal entry, letter, poem/story) to a variety of audiences. • Practice a process approach to writing. • Exhibit fluency and organization. • Enhance ideas that stimulate language expression and form (e.g., cluster, discuss, question, read). | <ul style="list-style-type: none"> • Establish and use criteria for effective writing to evaluate own and others' writing. • Internalize writing as a learning tool. • Write for a variety of purposes (e.g., expressive, transactive, imaginative) and forms (e.g., journal entry, letter, poem/story) to a variety of audiences. • Internalize the use of a process approach to writing. • Exhibit fluency, organization, and correctness. • Expand and refine ideas that stimulate language, expression, and form. |
|--|---|---|

Sample Teaching/Assessment Strategies: _____

Collaborative Process: Peer Tutoring • **Continuous Progress Assessment:** Anecdotal Records, Checklist, Conferencing, Interviews, Observation, Portfolio Development, Self-Assessment, Performance Events/Exhibitions • **Graphic Organizers • Problem Solving:** Brainstorming, Questioning, Debate, Interviews, Research • **Technology/Tools:** Computers, Multimedia, Telecommunications • **Whole Language Approach • Writing Process**

These sample strategies offer ideas and are not meant to limit teacher resourcefulness. More strategies are found in the resource section.

Ideas for Incorporating Community Resources: _____

- Invite a writer from the local paper to discuss how different purposes (e.g., news reporting, editorials) are used.
- Interview a local author to discuss how ideas are developed.
- Visit an advertising firm to discover how words are used as tools.

Core Concept: Writing

Sample Elementary Activities



- Write new lyrics for familiar songs. PE
- Create a class joke book. PE
- Create greeting cards for a variety of occasions. Organize a campaign to market your product. PE
- Use telecommunications to establish a project partnership with a school in another geographic location. PE, OE
- Explore the use of writing in real life by interviewing people from different occupations. Chart the types of writing used. PE, P
- Write a letter to a business praising a product or service. OE, P
- Keep a log of ideas and understandings about a content topic. OE, P

Sample Middle School Activities



- Write an information guide for next year's class of students. PE, OE
- Write a fairy tale from a different point of view and share with a younger audience. PE, OE
- Research a planet. Create a life form. Interview the "creature" about life on the planet and write a news article on the visitor. OE
- Identify and study a school or community problem. Design a plan of action with multiple solutions. Present the plan to the appropriate audience. PE, OE
- Compose a letter to a family member persuading him/her to change an unhealthy habit or lifestyle. OE, P
- Write a script for a commercial. OE

Sample High School Activities



- Create an informative portfolio representing yourself. P
- Write a song (e.g., rap, opera, rock, country) about one of your teachers. OE
- Prepare a resume and letter of application for an actual job advertisement. OE
- Write a handbook, survival manual, or books of tips for high school students to sell to middle school students. PE, OE
- Construct an operations manual for a piece of equipment (e.g., lawn mower, blender, wheel chair). OE
- Write slogans to encourage classmates to follow school safety rules. PE, OE

Reflections



The written word is one of the most powerful tools available for communicating thoughts, ideas, and feelings. Students will always be asked to respond, create, or inform in writing as a means of communicating with others. The ability to write for a variety of audiences, to organize and focus writing, and to communicate successfully is an absolute necessity in the age of communication.

Additionally, writing is a powerful thinking tool when used as "thinking to be read." It requires students to analyze, synthesize, reflect, and use other thinking skills. The "writing to learn" strategy also involves multiple forms, purposes, voices, and audiences. Writing used frequently, and for a variety of purposes, also enhances the student's abilities to read, listen, and speak.

Goal 1 : Use Basic Communication and Mathematics Skills

Academic Expectation

1.12

Students speak using appropriate forms, conventions, and styles to communicate ideas and information to different audiences for different purposes.

Learning Links: Translation / Storytelling / Telecommunications / Acting / Politics / Teaching / Conversation / Legal Argument / Interview / Selling / Bargaining / Diplomacy / Mediation

Elementary Demonstrators

Middle School Demonstrators

High School Demonstrators

Demonstrators should be read from bottom to top, but need not be demonstrated sequentially.

- Recognize the need to adjust communication based on audience response.
- Practice formal presentation for a specific audience and purpose (e.g., report, choral reading).
- Practice appropriate verbal (e.g., volume) and nonverbal (e.g., eye contact, facial expression, posture) behaviors.
- Engage in informal communications (e.g., conversation, social greetings/introduction, expression of thoughts/feelings).

- Analyze communication for audience response.
- Refine formal presentations for a variety of audiences and purposes (e.g., entertainment, imagination, information, persuasion).
- Use effective verbal (e.g., voice variety, rate, pitch) and nonverbal (e.g., gestures, movement) behaviors.
- Refine informal communications (e.g., conversation, discussion, interviews, expressions of thoughts/feelings).

- Evaluate and adjust communication for audience response.
- Deliver formal presentations for a variety of purposes (e.g., entertainment, imagination, information, persuasion).
- Exhibit effective behaviors for a variety of informal communications.
- Use effective verbal and nonverbal behavior to enhance presentation.

Sample Teaching/Assessment Strategies:

Collaborative Process: Cooperative Learning, Peer Tutoring, Reciprocal Teaching • **Community-Based Instruction:** Service Learning, Mentoring, Networking • **Continuous Progress Assessment:** Interviews, Conferencing, Performance Events/Exhibitions • **Graphic Organizers:** Advance Organizers, Notetaking • **Problem Solving:** Debate, Interviews, Oral History, Role-play • **Whole Language Approach**

These sample strategies offer ideas and are not meant to limit teacher resourcefulness. More strategies are found in the resource section.

Ideas for Incorporating Community Resources:

- Make an oral presentation to members of a local board or council (e.g., school board, fiscal court, neighborhood association, city council) about an issue of concern.
- Become "phone-pals" with area residents (e.g., elderly citizens living alone, individuals with disabilities, home-bound students).
- Invite a local actor/actress to discuss the verbal and nonverbal changes with different types of plays.

Core Concept: Speaking

Sample Elementary Activities



- Share a family heirloom or tradition of special significance. PE
- Give oral directions to classmates on “how-to” accomplish a task (e.g., make a sandwich, make a bed). After the class has followed your directions, evaluate your communication. PE, OE, P
- Describe a favorite outfit or toy, so that a classmate is able to draw it. PE, OE
- Create a performance (e.g., choral reading, flannel story, puppet show) for a younger audience. PE
- Make a presentation to introduce your parent/guardian at open house. PE

Sample Middle School Activities



- Dress as a main character from a novel. Share information about your character (e.g., experiences, problems, friends, family, concerns, hopes). PE, OE, P
- Conduct and tape an interview. Review the tape and evaluate your strengths and weaknesses as an interviewer. PE, P
- Prepare tapes of books to share with an audience (e.g., younger students, nursing home residents, hospital patients). PE
- Produce and present a school communication program (e.g., news program, assembly, intercom announcement). PE, OE
- Present an illustrated speech to elementary students about the different opportunities in middle school (e.g., exploratory, intramurals, teaming). PE, OE, P

Sample High School Activities



- Keep an electronic portfolio of your formal speaking activities. Reflect on your strengths and weaknesses and on progress demonstrated over time. OE, P
- Prepare and present your qualifications for a particular position. PE, P
- Teach a group of peers the American Sign Language alphabet. PE
- Make a presentation to eighth graders on high school clubs. PE, OE
- Video a public service announcement supporting an issue (e.g., education reform, recycling, safety). PE

Reflections



The primary productive language skill is speaking. Young children mimic the language of others and in the process learn to use language with ease. To create this same natural flow of language in more formal settings, and in order to communicate ideas through oral language, students need frequent and structured opportunities to speak.

Beginning with formal, impromptu experiences such as storytelling, sharing, and role-playing and then moving to written material such as speeches, debates, or plays, students develop confidence in their use of oral language. This ability to present oneself and one's ideas in skillful and effective ways is an important goal of oral communication.

It is interesting to note that public speaking creates anxiety in many adults. People hate to get up and present their ideas in front of their peers. Teachers can reduce this anxiety in students by providing rich and diverse opportunities for students to hone their abilities and develop the skills necessary for effective, confident oral communication. Those skills include developing an organizational plan, researching background information, and delivering an idea effectively. The suggested activities offer many learning situations that enable students to develop oral communication skills.

Source: Fogarty & Bellanca—Blueprints for Thinking in the Cooperative Classroom and Patterns for Thinking, Patterns for Transfer

Goal 1: Use Basic Communication and Mathematics Skills

Academic Expectation

1.13: Students make sense of ideas and communicate ideas with the visual arts.

Learning Links: Environmental Design / Graphic Design / Fiber Art / Interior Design / Crafts / CAD / Set Design / Television / Aesthetics / Fashion / Landscaping / Photography / Film/Video / Museums / Jewelry / Light

Elementary Demonstrators	Middle School Demonstrators	High School Demonstrators
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Demonstrators should be read from bottom to top, but need not be demonstrated sequentially.

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> • Express an idea, image, or pattern utilizing elements and principles of design. • Examine and construct meaning from visual art and architecture. • Explore elements (space, line, shape/form, value, texture, color) and principles (balance, emphasis, contrast, variety, repetition, movement, rhythm, pattern, proportion/distortion, transition/graduation, dominance/subordination, harmony, unity) of design in visual works. • Use drawing, painting, print making, modelings, and constructing to communicate ideas and feelings. • Use art media, tools, techniques, and processes. | <ul style="list-style-type: none"> • Create a visual product which illustrates and integrates ideas and feelings. • Compare and analyze various visual art forms. • Describe the elements and principles of design used to communicate ideas and feelings. • Use drawings, painting, printmaking, sculpting, ceramics, fibers and technology to communicate attitudes, ideas, and feelings in a wide variety of media. • Use art media, tools, techniques, and processes skillfully. | <ul style="list-style-type: none"> • Integrate the elements and principles of design with varied visual media to communicate ideas. • Interpret and critique visual art and architecture. • Use a wide variety of traditional, technical, and innovative art processes and media to communicate ideas, attitudes, and feelings. • Determine and use appropriate tools, media, processes, and techniques skillfully and with attention to good craftsmanship. |
|---|---|--|

Sample Teaching/Assessment Strategies:

Continuous Progress Assessment: Portfolio Development • **Graphic Organizers:** Graphic Representations • **Problem Solving:** Formulating Models, Creative Problem Solving, Role-play • **Technology/Tools:** Manipulatives, Puppets, Multimedia • **Whole Language Approach**

These sample strategies offer ideas and are not meant to limit teacher resourcefulness. More strategies are found in the resource section.

Ideas for Incorporating Community Resources:

- Visit art exhibits, galleries, museums, crafts stores, historic buildings and sites.
- Invite local crafts person, artisan, or professional (e.g., potter, stained glass artist, painter, sculptor, woodworker, planner, architect or designer) to class or visit their workplace.
- Use community buildings and spaces for the exhibition of art work.
- Interview local store owners on how the display of merchandise impacts the sale.

Core Concept: Visual Arts

Sample Elementary Activities



- Create an animal sculpture with movable parts. PE, P
- Manipulate shapes of different sizes, color, and balance to construct a building, bridge, etc. PE, P
- Produce a crayon batik quilt. PE, P
- Research pottery of diverse cultures; select a style and recreate similar designs. PE, P
- Produce a fabric design to be used as a performing costume. PE
- Make book character sculptures. PE
- Draw a person, flower, or tree from life. PE
- Use drawing and painting to illustrate a poem or story. PE, P

Sample Middle School Activities



- Build a replica of a ship, plane, car, or building. Define artistic elements and principles of design used in the creation process. PE, P
- Collect logo and flag samples and research design rationale. Develop a team logo and flag. PE, P
- Weave a basket from natural fibers. PE, P
- Paint a back drop for a school musical or play. PE
- Use a hand construction technique to make a functional clay vessel; decorate and fire. PE
- Analyze an art object or a piece of architecture and explain how the artist/architect used design elements or principles to express an idea or feeling. PE, OE
- Redesign your classroom to reflect a period, theme, or culture being studied. PE, OE, P

Sample High School Activities



- Design a home for you and your family. Use floor plan scale drawings to explain interior space and elevation for exterior space. PE, P
- Design a statue, monument, or piece of art for a specific public space. Explain choice of media, imagery, and location. PE, P
- Create costumes and set design for an elementary or middle school performance. PE, P
- Paint an expressive self-portrait. PE
- Use a computer to illustrate language arts, math, or science projects. PE, P
- Visit an historic site. Create visuals for a brochure using photographs, line drawings, and selected type. P
- Research and report on the Kentucky clay deposits. Use natural clays to make a utilitarian vessel. PE, OE, P
- Film special events and daily school life and edit into a video documentary or year book. PE, P

Reflections



The visual/spatial intelligences, as delineated by Gardner's work in multiple intelligences, is a valued way of knowing and expressing how one perceives the world. The visual arts permit expressions that transcend the boundaries of the verbal/linguistic modality. Through drawings, paintings, printmaking, sculpting, ceramics, fibers, and technology, students have powerful communication tools at their command.

This particular academic expectation, constructing meaning and/or communicating ideas through the visual arts, is also aligned with the models of integrated curricula. Use of the visual arts presents opportunities to share ideas with others in universally understood media. Symbolic language, design, and graphic representations of ideas are threads that weave through every discipline and every culture. In addition, the visual arts, when coupled with verbalization skills, present the perfect balance for communication arts such as film and video production.

Schooling students in the visual arts develops their spatial intelligence and gives them other channels for learning, knowing, producing, and sharing.

Sources: Gardner—*Frames of Mind*

Lazear—*Seven Ways of Knowing*

Campbell, Campbell, & Dickinson—*Teaching and Learning Through the Multiple Intelligences*

Goal 1 : Use Basic Communication and Mathematics Skills

Academic Expectation

1.14: Students make sense of ideas and communicate ideas with music.

Learning Links: Sound Tracks / Lyrics / Opera/Musical / Hymns and Chants / Body Percussion / Band/Orchestra / Dance / Composition / Folk Songs / Symmetry / National Anthems / Synthesizer / Chorus

Elementary Demonstrators

Middle School Demonstrators

High School Demonstrators

Demonstrators should be read from bottom to top, but need not be demonstrated sequentially.

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> • Communicate ideas and emotions through performing and/or creating music using developmentally appropriate performance techniques/practices and music concepts. • Recognize and develop music concepts (melody, harmony, rhythm, form, expression, and style). • Experience and perform music from diverse cultures. • Choose, perform, and listen to music for personal enrichment. • Explore and respond to music through singing, instrument playing, moving, listening, reading, writing, and creating. | <ul style="list-style-type: none"> • Communicate ideas and emotions through performance and/or composition using developmentally appropriate performance techniques/practices and music concepts. • Recognize and demonstrate music concepts using appropriate terminology. • Compare and contrast music of diverse cultures. • Choose, perform, and listen to music for personal enrichment. • Experience and respond to music through singing, instrument playing, moving, listening, reading, writing, and creating. | <ul style="list-style-type: none"> • Create and/or communicate ideas and emotions through performance and/or composition using developmentally appropriate performance techniques/practices and music concepts. • Evaluate the conceptual structure and performance techniques used to communicate ideas and emotions. • Analyze the similarities and differences in music among diverse cultures. • Choose, perform, listen to, and analyze music for personal enrichment. • Experience music and develop appropriate performance skills through singing and instrument playing. |
|--|--|--|

Sample Teaching/Assessment Strategies:

Collaborative Process: Cooperative Learning • **Community-Based Instruction:** Field Studies • **Continuous Progress Assessment:** Performance Events/Exhibitions • **Technology/Tools:** Computers, Games, Videotaping • **Whole Language Approach** • **Writing Process**

These sample strategies offer ideas and are not meant to limit teacher resourcefulness. More strategies are found in the resource section.

Ideas for Incorporating Community Resources:

- Experience community music performances (e.g., churches, radio stations, recording studios, cable, public access, dance groups).
- Invite local musicians (e.g., classical, jazz, folk, rock) and instrument builders to class.
- Participate in local music festival or production.

Core Concept: Music

Sample Elementary Activities



- Compare and contrast music performed from different cultures (e.g., Latin America, Africa, Asia) and North American music forms (e.g., folk, country, bluegrass, jazz, pop) and how performing practices are alike and different. OE
- Choose a music selection and create an accompanying visual art work, choreography, or dance. PE, P
- Create and conduct a survey of classmates' personal music preferences and perform a skit representing the top three preferences. PE, P
- Create a musical instrument and demonstrate how the instrument should be played. Use music vocabulary in the presentation. PE, P
- Perform varied music genres in the appropriate music style using developmentally appropriate music skills. PE, OE, P

Sample Middle School Activities



- Analyze the music of a historical period and show how it reflected the social, economic, and political conditions of the period. OE
- Use different forms of music in a presentation to communicate the moods and ideas of adolescence. PE, P
- Analyze the use of music for religious and social purposes in various regions of the world. OE, P
- Make a music video of a science, social studies, or math theme being studied. Define life-like music roles used in the production. P
- Perform varied music genres in the appropriate music style using developmentally appropriate music skills and playing techniques. PE, OE, P

Sample High School Activities



- Create a media presentation set to music representing the emotions and critical attributes of an event having social, political, cultural, and historical impact. Define life-like music roles used in production. P
- Analyze the background music of movies and television shows and communicate the emotions and feelings involved. OE, P
- Create and perform music for in-school ceremonies. PE, P
- Create and perform humorous musical productions to enhance learning. P
- Perform varied music genres in the appropriate music style using developmentally appropriate music skills and playing techniques. PE, OE, P

Reflections



Like the visual arts, music is a universal language that crosses curricula and cultures. Think about the friends or students you know who hear a song once and know it, hear a melody and play it back, listen to the meter in poetry and reproduce that meter in a personal poem. These people, adept in the musical intelligence, illustrate a learning avenue that offers other ways of teaching and learning.

By incorporating singing, instrument playing, listening, notation, and composition into academically focused learning experiences, students develop their own musical skill and intelligence. They are then equipped to use that skill and talent in expressing their own knowledge and creative ideas. Of course, the power of this mode of communication is in the dual responses that the musical intelligence evokes—both the affective and the cognitive. All learning is enhanced when the emotions are tapped; if one is intensely involved in learning, that learning is slotted into long-term memory more easily. By taking advantage of the power of music, by using this motivating messenger, students have yet another viable way to communicate their ideas and emotions.

Sources: Gardner—*Frames of Mind*

Lazear—*Seven Ways of Knowing*




Campbell, Campbell, & Dickinson—*Teaching and Learning Through the Multiple Intelligences*

Goal 1 : Use Basic Communication and Mathematics Skills

Academic Expectation

1.15: Students make sense of and communicate ideas with movement.

Learning Links: Sports / Effort / Body Language / Coordination / Transportation / Dance / Mime / Migration / Improvisation / Patterns / Waves / Gravity / Dynamics / Trajectory

Elementary Demonstrators 	Middle School Demonstrators 	High School Demonstrators 
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Demonstrators should be read from bottom to top, but need not be demonstrated sequentially.

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> • Create a movement sequence with a beginning, middle, and end. • Analyze ideas or emotions expressed through a movement sequence using basic terms. • Demonstrate combined locomotor and nonlocomotor movement patterns. • Express ideas/emotions through movement (e.g., body awareness, space awareness, time, force, technique, relationship). • Demonstrate movement elements (e.g., locomotor and nonlocomotor). | <ul style="list-style-type: none"> • Create a complex movement sequence with a beginning, middle, and end. • Analyze a movement sequence using appropriate terminology. • Demonstrate combined movement sequences that express an idea or emotion. | <ul style="list-style-type: none"> • Create and evaluate a dance performance using appropriate technical, performance, and thematic elements. • Choreograph a movement sequence that expresses ideas or emotions. • Analyze the similarities and differences in a variety of dance forms (e.g., ballet, modern, jazz, ethnic, folk, social, and square) among diverse cultures. |
|--|---|--|

Sample Teaching/Assessment Strategies: _____

Community-Based Instruction: Field Studies • **Continuous Progress Assessment:** Performance Events/Exhibitions • **Graphic Organizers:** Storyboard, Graphic Representations • **Problem Solving:** Creative Problem Solving, Role-play • **Technology/Tools:** Interactive Video, Games

These sample strategies offer ideas and are not meant to limit teacher resourcefulness. More strategies are found in the resource section.

Ideas for Incorporating Community Resources: _____

- Attend community theatre, dance studios, clogging, and square dance performances.
- Interview sports participants about their use of movement.
- Discuss movement patterns with transportation planners, engineers, soil conservation planners, movers, and real estate agents.

Core Concept: Using Electronic Technology

Sample Elementary Activities



- Create a database to record information about different trees. Recommend whether a given tree would flourish in Kentucky based on understanding of climate and weather in the state. PE
- Use a spreadsheet to record and graph the growth of plants given different soil and atmospheric conditions. Using a multimedia platform, present your findings as to the best methods to promote or hinder plant growth. P
- Use CD-ROM reference materials to gather information to produce a report using multimedia (e.g., a word processor with graphing capabilities) comparing the metamorphosis of caterpillars to moths and tadpoles to frogs. P
- Use audio or video tape to collect an oral history of your community. Write a report using multimedia to compare the variations in story versions. OE, P
- Use hypermedia to present the sequence of events in the growth of a flower from a seed. P

Sample Middle School Activities



- Compare the damage created by earthquakes and volcanoes in the 20th century in the United States using a spreadsheet and graphing program. Use multimedia to report the results in a narrative document. P
- Compare the personal characteristics of heroes from literature using a database. Present the results as posters created with graphic software. PE
- Demonstrate the movement of the planets in our solar system using hypermedia. PE
- Demonstrate how to proportionally increase ingredients in various recipes using a spreadsheet. PE
- Share autobiographies with students from another district using an electronic bulletin board via telecommunications. PE, P

Sample High School Activities



- Record and analyze, in a database, information related to capital punishment. Write a position paper, using research from CD-ROM and telecommunications resources, which either supports or refutes capital punishment as a means of crime prevention. P
- Demonstrate the effects of changing variables in algebraic equations using a spreadsheet and graphs. PE
- Demonstrate, using hypermedia, the differences in energy use between monocotyledons and dicotyledons. P
- Discuss political issues with other students who are of a different political party or cultural background (e. g., Republican, Democrat, Independent, etc.) using telecommunications. Enter commentaries from discussions in a reflective journal. P
- Present the economic, social, political, and entertainment issues related to the Kentucky Derby using multimedia. Reflect an opinion in the presentation as to the effects of these factors. P
- Gather and analyze information regarding lotteries across the United States, using CD-ROM reference material and a spreadsheet with graphing capability. Prepare a position paper, using a word processor, about the value of lotteries with regard to the number of dollars spent by consumers, dollars won by consumers, dollars spent on advertising, and operational costs and the amount used for other purposes (e. g., funding state initiatives or special projects). P

Reflections



Students live in a high-tech world where computer hardware and software change almost daily, where satellite communications, facsimile machines, modems, fiber optics, and microwave transmission permit instantaneous interactions across boundaries and oceans. It is imperative, therefore, that they engage in electronic investigation and exploration. Students must be familiar not only with word processing program, and databases, but also spreadsheets, graphics, telecommunication, and multi-media software. In addition, they must be able to utilize these technologies to create new information and resources.

Students equipped with the primary skills of electronic technology are able to gather, organize, manipulate, and express data and ideas. They are also skilled enough to create information and resources, and to continue the development of future technologies.

In an information society, where the doubling of known information is measured in months, only through technology can students hope to keep abreast of cutting-edge ideas. Many students already have the ability to deal with the technical world ("If you have a computer problem ask a kid!"). Do whatever possible to foster and encourage the natural inclination of these young electronic wizards.

Source: Fogarty & Haack—Future World, Future School

Goal 1: Use Basic Communication and Mathematics Skills

Academic Expectation

1.16: Students use computers and other kinds of technology to collect, organize, and communicate information and ideas.

Learning Links: Fiberoptics / Modems / Distance Learning / Microwave Transmission / Satellites / FAX Machines / Remote Sensing / CAD/CAM / Robotics / Bulletin Boards / E-Mail

<i>Elementary Demonstrators</i>	<i>Middle School Demonstrators</i>	<i>High School Demonstrators</i>
		

Demonstrators should be read from bottom to top, but need not be demonstrated sequentially.

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> • Express information and ideas using technology. • Gather and manipulate data using technology. • Use technology to display information in various ways. • Use a variety of technologies in various ways. | <ul style="list-style-type: none"> • Compare and analyze the effectiveness of various technologies for a specific purpose. • Expand knowledge by identifying and using technology for a specific purpose. • Integrate the use of a variety of technologies. • Analyze relationships/patterns to draw inferences using technology. • Express information and ideas creatively using technology. | <ul style="list-style-type: none"> • Analyze and select appropriate technologies to efficiently complete a task and/or enhance productivity. • Conduct investigations; solve problems; create products; complete tasks by integrating various forms of technologies. |
|---|---|--|

Sample Teaching/Assessment Strategies: _____

Collaborative Process: Cooperative Learning, Peer Tutoring • **Continuous Progress Assessment:** Portfolio Development • **Graphic Organizers:** Time Line, Graphic Representations • **Problem Solving:** Creative Problem Solving, Inquiry, Future Problem Solving, Research, Case Studies, Simulations • **Technology/Tools:** Computers, Calculators, Telecommunications, Distance Learning, Interactive Video, Multimedia, Videotaping • **Writing Process**

These sample strategies offer ideas and are not meant to limit teacher resourcefulness. More strategies are found in the resource section.

Ideas for Incorporating Community Resources: _____

- Interview a representative from KET on the ways technology influences programming.
- Invite a local doctor to discuss how technology influences diagnosis and treatment.
- Interview a representative from a newspaper on technological changes in the industry.

Core Concept: Movement

Sample Elementary Activities



- Express emotions non-verbally through body language and facial expression (mime). Other students verbally express how they think you feel. OE, P
- Using clay, construct a sculpture of a person engaged in dance or gymnastic activity, making sure figure is balanced. PE, P
- Interpret a work of art through movement. PE, P
- Select and read an account of a sporting event. Create a movement sequence that portrays the event. P
- Describe the growth of a plant, the blooming of its flower, and seed dispersal through a movement sequence. PE, OE, P

Sample Middle School Activities



- Pantomime a movement sequence to express your feelings about an event. PE, OE
- Play charades using historical events as your themes. PE
- Observe the non-verbal behaviors of a small group in the cafeteria. Create a dialogue based on your observations. PE, OE
- View a dance performance that tells a story. Express your interpretation of the story in another media and from another culture. P
- Write a paragraph expressing a personal conflict with another person. Dramatize the conflict. PE, OE, P

Sample High School Activities



- Illustrate the concept of the four levels of protein organization through team/body movements with each team member representing one amino acid. PE, P
- Review the works of a single visual artist and interpret the artist's style through movement. PE, OE, P
- Pantomime to a concert singly or in a group. After identification of the concept, analyze and critique the pantomime in terms of the completeness and accuracy of the representation. PE, P
- Create a machine sculpture using student bodies and body movement. PE

Reflections



As described by Gardner, the kinesthetic intelligence is the intelligence seen in the skill and grace of athletes, dancers, actors and jugglers. The development of precision and skill in movement is critical because we rely on motor skills throughout life.

In the early years of school, movement is considered an integral part of the many experimental activities through which children learn. Students need to continue developing and refining motor skills to enhance coordination, refine ease in movement, and reinforce physical fitness. For this reason, movement can and should be integrated into the standard curriculum.

According to Gardner, many students learn, and demonstrate learning best through the kinesthetic intelligence. To experience long-term learning, they need more opportunities to express themselves through movement. For example, the suggested activities that target non-verbal communication such as movement sequences, body language and sports-related skills, can be targeted as learning activities within traditionally structured lessons. In this way, opportunities for movement become tools for learning throughout the student's day.

Sources: Gardner—Frames of Mind

Lazear—Seven Ways of Knowing

Campbell, Campbell, & Dickinson—Teaching and Learning Through the Multiple Intelligences

Notes

